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ABSTRACT

A study examined the ways in which Head Start preschool children's vocabulary developed when they and their mothers engaged in joint reading. Subjects, 19 dyads, were observed as they interacted around expository texts presented in both familiar (newspaper toy advertisements) and traditional (trade books) formats. Subjects were observed in their homes for 10 readings each, during which the dyads read a series of presented texts. The children's ability to identify words from the texts read and their comprehension of a standardized receptive vocabulary list were measured. Mothers talked more than children in all contexts; furthermore, different forms of talk were observed around the different text formats. Correlational and sequential analyses indicated that children's word recall was best predicted by responsive maternal strategies, such as encouraging children to talk about the text, and children's modeling of maternal strategies. (Contains 36 references and 5 tables of data. An appendix of data is attached.) (RS)

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Joint Reading Between Mothers and Their Head Start Children

Vocabulary Development in Two Text Formats

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Spring 1994

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The National Reading Research Center (NRRC) is funded by the Office of Educational Research and Improvement of the U.S. Department of Education to conduct research on reading and reading instruction. The NRRC is operated by a consortium of the University of Georgia and the University of Maryland College Park in collaboration with researchers at several institutions nationwide.

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Abstract. This study examined the ways in which Head Start preschool children's vocabulary developed when they and their mothers engaged in joint reading. The authors observed nineteen dyads that interacted around expository texts presented in both familiar (newspaper toy advertisements) and traditional (trade books) formats. The authors observed the dyads in their homes for 10 readings each, during which the dyads read a series of presented texts. The children's ability to identify words from the texts read and their comprehension of a standardized receptive vocabulary list were measured. Mothers talked more than children in all contexts; furthermore, different forms of talk were observed around the different text formats. Correlational and sequential analyses indicated that children's word recall was best predicted by responsive maternal strategies, such as encouraging children to talk about the text, and children's modeling of maternal strategies.

Adults reading to children is a very important event in children's lives. This event is important for many aspects of children's development, such as school-based literacy (e.g., Bus & van Ijzendoorn, 1988; Cochran-Smith, 1984; Dickinson & Smith, n.d.; Heath, 1982) and early language development (e.g., Ninio & Bruner, 1978). By being read to, children get "hooked on books" (Fader & McNeil, 1966), and they consequently become accustomed to school-based literacy events (Cochran-Smith, 1984; Heath, 1982). In addition, children's vocabulary is developed from tutorials on the words presented in the books that are being read to them (Cornell, Senechal, & Broda, 1988; Werner & Kaplan, 1952). In these contexts, children's language is typically expanded by mothers in different ways, and mothers often explicitly model and teach labels for pictured objects (e.g., Cornell et al., 1988;

Snow & Goldfield, 1983). In the present study, we extend this body of research by examining the ways in which a group of Head Start children recalled word meanings taught to them by their mothers' presentation of different types of text.

Book reading is a particularly good context for developing children's vocabularies. As noted by Werner and Kaplan (1952) and Ninio (1983), when adults and children interact around books, they are jointly focused on pictures and corresponding text. It has been shown that parents use a variety of strategies to teach and elicit from children the labels for pictures in the text (e.g., Ninio, 1983; Pellegrini, Brody, & Sigel, 1985; Pellegrini, Perlmutter, Galda, & Brody, 1990; Sorsby & Martlew, 1991). This rich descriptive research base has enabled experimental researchers to establish causal links between specific maternal teaching strategies and children's word learning status (e.g., Cornell et al., 1988; Whitehurst et al., 1988).

This research, however, is limited in two important ways. First, with the exception of a few published studies (e.g., Cornell et al., 1988; Pellegrini et al., 1990; Sorsby & Martlew, 1991), researchers have not attended to the nature of books being read to children. Indeed, in some cases the specific books read are not even mentioned in Methods sections of research reports. Although the nature of the books is important in terms of replication by other researchers, the literary genre of the books is specifically important to word teaching. Books in the narrative mode, traditional story books like *Peter Rabbit*, elicit minimal rates and varieties of mother-child interaction and, correspondingly, few word teaching strategies (Cornell et al., 1988; Pellegrini et al., 1990). By comparison, expository texts, like alphabet books, elicit significantly more interaction and specific word teaching strategies (Pellegrini et al., 1990). Furthermore, maternal word teaching strategies, even when experimentally manipulated, are differentially effective for word learning from narrative and expository texts (Cornell et al., 1988). In short, joint book-reading studies have not been clear about the books they use as stimuli and have confounded the literary genres of the books used in their studies. From the literature that does exist, it appears that words can be taught most effectively using expository texts. For these reasons, the children and mothers in this study were observed interacting with a series of expository texts.

A second limitation of the existing literature is that it has generally been conducted with mainstream-culture children and mothers. When nonmainstream-culture children and mothers have been studied (i.e., generally, children and mothers from poor economic circumstances), researchers observed very young children in the earliest stages of word learning (e.g., Ninio, 1983; Ninio & Bruner, 1978). In other cases, poor children have been studied outside of their home environments, such as in daycare centers (Valdez-Menchaca & Whitehurst, 1992), thereby placing these families in strange contexts that may inhibit, rather than maximize, their exhibition of competence (Bronfenbrenner, 1979).

It is important to study the interaction between nonmainstream-culture mothers and children in familiar environments. We know

that when we study children and families in familiar situations we get a more accurate description of the way interaction typically occurs than in a strange situation (Bronfenbrenner, 1979), and therefore, parents and children often exhibit higher levels of competence. Recent advances in context-specific cognition (e.g., Laboratory of Comparative Human Cognition [LCHC], 1983) suggest that it is theoretically important to describe the ways in which different groups learn in local contexts, as these descriptions can be used to design school curricula. Such considerations are especially important in early education programs such as Head Start. Using texts that are familiar to nonmainstream-culture children may be one instructional strategy that we can use to provide young children with opportunities to become literate and to maximize their possible success in that endeavor.

Based on these assumptions, one would expect these interaction styles between mothers and their children to vary according to the familiarity of the expository texts read. Continuing with this reasoning, expository texts that are familiar to participants, such as advertisements from a local store, should elicit high levels of child participation and child-sensitive maternal teaching strategies (Pellegrini et al., 1990). Traditional expository trade books, such as alphabet and animal-labeling books, however, are less familiar to nonmainstream-culture families (Heath, 1983; Pellegrini et al., 1990). When young children are unfamiliar with the text format, meaning must be jointly negotiated with their mothers. In the present study, we observed mothers and children interacting around expository texts in familiar formats, such as newspaper toy advertisements, and in traditional children's book formats.

The techniques chosen to study the mother-child interactions were rather traditional. We chose to analyze the extent to which maternal and child utterances varied around familiar and traditional texts. Additionally, we examined which strategies were significant predictors of children's identification of words presented in the t[illegible]s as well as how these strategies related to a more general measure of children's receptive vocabulary, using the Peabody Picture Vocabulary Test. A classification system for maternal and child utterances was implemented with an eye on the function that these utterances might serve in word teaching and recall. Our implemented category system was influenced by the extant joint-book-reading literature, especially the work of Cochran-Smith (1984), Cornell (Cornell et al., 1988), Dickinson (Dickinson & Smith, n.d.), Heath (1982), and Pellegrini (Pellegrini et al., 1990).

Categories for the types of maternal questions and the adequacy of children's responses were generated. Additionally, children's incorrect responses to maternal questions were examined. Both sorts of utterances were analyzed because they seemed to be explicitly used by mothers to teach or explicate the words presented in these texts. Recognizing that children's contributions to literate discourse are important in word comprehension (Cornell et al., 1988; Dickinson & Smith, n.d.; Whitehurst et al., 1988), we also considered their initiations of and reactions to maternal strategies. Specific strategies used by both mothers and children, such as terms explicating linguistic process (e.g., *read*, *talk*, *write*), were

examined, as were maternal expansions of children's utterances, which were included because they have been implicated in early literacy (Dickinson & Smith, n.d.; Olson, 1983).

Two interaction strategies, text-world and world-text, seemed particularly important in a study focusing on teaching and learning words in familiar and unfamiliar contexts. These strategies, like Cochran-Smith's (1984) text-to-life and life-to-text interactions, are important indicators of ways in which meaning from books is extended or applied to extratextual matters (i.e., text-world and text-to-life), and the ways in which text is understood and comprehended in terms of current knowledge (i.e., world-text and life-to-text). These strategies, which are more explicitly defined with accompanying examples in the Method section and in the Appendix, should be important in teaching and recalling words because learning involves relating the new information to existing information, not unlike Piaget's (1983) notion of assimilation and accommodation.

In an effort to contextually situate the maternal and child utterances, sequential lag analyses were performed. Specifically, those utterances that were significantly related to children's recall of words from the texts read as well as their scores on a generalized vocabulary measure were analyzed in terms of antecedent and consequential utterances. In this strategy, we identified those utterances that preceded and followed the utterances which were significantly related to the criterion measured (i.e., recall and vocabulary). For example, if a child's use of a linguistic term was significantly correlated with the recall of words from a familiar text, we analyzed the *maternal* utterances that preceded and followed the child's use of the term. Correspondingly, if a maternal expansion around the traditional texts was related to a child's recall of the words presented, we analyzed the *child* utterances that preceded and followed the maternal expansion. By examining target utterances in this way, we come closer to recognizing the different functions served by a specific utterance; that is, the function, or consequence, of an utterance can be determined by examining utterances that follow it. Ideally, we would have liked to consider utterances at the multiple-turn level, that is, beyond lag 1 — but unfortunately, such a strategy requires a sample size (see Bakeman & Gottman, 1986) that is often difficult to manage with the type of transcription and text analyses done in the present study.

In this report we examine the ways in which mothers taught their Head Start children words depicted in traditional and familiar expository texts. We hypothesized, following the extant joint-reading literature, that those maternal strategies that maximized children's verbalizations would be the best predictors of children's identification of the words presented in the texts, as well as of their more general vocabulary level.

METHOD

Subjects

The mothers and children in this study were recruited as part of a larger study involving Head Start centers in a small city. Parents were asked by Head Start teachers if they were interested in participating in an early literacy

project. In exchange for participation, recruited parents were paid $40. This resulted in the recruitment of a number of mothers, 19 of whom are described in this report. All families were classified as lower socioeconomic status by Head Start standards and identified themselves as either African-American or Caucasian. The mothers' average years of education were 10.6.

The children in this study (11 boys and 8 girls) had a mean age of 51 months (4.25 years). Children's gender was not used as a grouping variable because previous mother-child book reading research with similar samples (e.g., Pellegrini et al., 1990), as well as with a middle-class sample (Pellegrini et al., 1985), found no gender-of-child effects.

Procedures

All observations took place in the homes of the target families. The first home visits were to establish rapport with the families, to explain the procedures of the project, and to complete the HOME inventory (Caldwell & Bradley, 1984). Through the HOME interviews, we found that all families received one or two local newspapers. One was a commercial daily newspaper with national, state, and local news, as well as advertisement sections. The other newspaper was primarily an advertising paper although it did have some local news; it was delivered to all homes in the area free of charge. Mothers read newspaper comics and/or toy advertisements with their children. Given the contrived nature of strangers videotaping interactions in the home, four observations were taken so as to maximize the likelihood of mothers and children exhibiting highest levels of competence (Tulkin, 1972; Wachs, 1985). Individual home visits were separated by one week.

The books read by mothers and children were provided by the experimenters. Four different expository texts were used. Two were typical children's trade books (*Who Lives at the Zoo?* and *My First Book of Words*, both Golden Books), and two were expository texts constructed by the experimenters to reflect the more familiar format of the labeled toy advertisements from the local newspapers and labeled pictures from the children's preschool. These texts were constructed and bound as books. Mother-child reading sessions were videotaped and later transcribed.

Measures

Transcription and Coding Scheme Preparation. Transcriptions of all verbalizations and gestures made by both mothers and children were made from the videotapes. The sequential integrity of the verbal and nonverbal behavior was maintained in the coding schemes and in the data analyses. Coding schemes for child and mother behavior were developed in stages by the first author. First, separately for children and mothers, individual utterances were labeled according to the specific function they seemed to serve in relation to vocabulary teaching. The result was an overwhelming 242 maternal categories and 134 child categories. Next, these individual categories were grouped into categories that served similar functions. Utterances were included for analyses only if they were assigned to the same functional cate-

gory on three out of the four read-throughs. This resulted in 26 molar maternal categories and 23 molar child categories (see the Appendix for a full list with examples).

The extent to which utterances could be reliably sorted into these molar categories was determined in two ways. First, as noted previously, each utterance was assigned to the same category on three of four independent sortings by the same coder. Second, a second observer sorted 100 randomly chosen utterances into molar categories to a level of .93 (Spearman's *rho*). All categories were mutually exclusive.

Mothers' Language. Mothers' language was put into 1 of 26 categories listed below (see Appendix for specific descriptions of each category).

1. Answers own questions
2. Describes actions
3. Clarify
4. Conflict/disagree
5. Corrects
6. Asks for description
7. Asks to label
8. Asks to read or spell
9. Asks about a subordinate
10. Asks about a superordinate
11. Describes
12. Gives superordinate label
13. Gives subordinate label
14. Expands child's utterance
15. Linguistic question
16. Linguistic description
17. Narrativizes
18. Negative reinforcement
19. Orient
20. Reads present text
21. Reinforce/repeat
22. Slot/frame provided
23. Text-world
24. WH-question
25. World-text
26. Yes/no question

Children's Language. There were 23 categories as listed below (see Appendix for full descriptions).

1. Acknowledge
2. Ask question
3. Clarify
4. Conflict/disagree
5. Correct answer to subordinate-label question
6. Correct answer to superordinate-label question
7. Correct answer to other questions
8. Inadequate answer
9. "Don't know"
10. Describes subordinate
11. Describes superordinate
12. Expands/extends
13. Initiates/labels subordinate
14. Initiates/labels superordinate
15. Linguistic
16. Narrativizes
17. Not relevant to preceding utterance or text
18. Reads
19. Repeats
20. Text-world
21. "Want"
22. World-text
23. Other

Children's General Receptive Vocabulary. Children were tested individually on the Peabody Picture Vocabulary Text (PPVT) (Dunn & Dunn, 1981), a measure of children's recep-

tive vocabulary. The unit of analysis we used for children's receptive vocabulary was the test's standardized scores (M = 100, SD = 15). The average PPVT score for this sample was 73.40 (SD = 17.82).

Children's Words Identified From Specific Books Read. Immediately after mothers read each book to their children, the children were asked a series of word identification questions taken from the book just read. More specifically, children were asked by an experimenter to identify (i.e., "What's this called?") a series of pictures taken from each text. Children were asked a total of 10 questions from each text, and their responses were audiotaped. The first response to the experimenter's question was recorded. A response was considered correct if the child used the label given in the text. The total number of correct responses for each text format was the unit of analysis; that is, the total number correct from each text in the familiar format was aggregated into one score. Similarly, the score for the traditional texts was the aggregate of the number correct from each of the two recall tests.

RESULTS

The initial series of analyses described the variation in mothers' and childrens' utterances as a function of text format. To that end, a series of 2 (person: mother, child) X 2 (text format: familiar, traditional) repeated-measures analyses of variance (ANOVA) were calculated on categories of utterances that mothers and children used in common. In all cases, except where the total number of utterances was the dependent variable, utterances were expressed in terms of their relative frequency to the total number of utterances used by that individual in that context. The descriptive statistics for mothers' and children's utterances are displayed in Table 1.

The following child and maternal utterances that were used in common were analyzed: total utterances, descriptions, questions, clarifications, conflicts, expands, linguistic terms, narrativizes, reads, repeats, text-to-world, world-to-text. When we compared the total utterances generated by mothers and children in a repeated-measures ANOVA, a significant main effect for person was detected, $F(1, 32) = 25.48$, $p < .0001$, with mothers generating significantly more utterances than children, and for text format, $F(1,32) = 9.29$, $p < .004$, with more talk being observed around traditional texts than around familiar texts. There were also significant person effects on the following categories: clarifications, $F(1, 32) = 3.92$, $p < .05$; expands, $F(1,32) = 10.24$, $p < .003$; and conflicts, $F(1,32) = 5.40$, $p < .02$. For all categories, except conflicts, mothers generated more utterances than did children.

For the linguistic terms category, there was a significant main effect for person, $F(1,32) = 10.07$, $p < .003$, with more linguistic terms being used by mothers than children. There was also a text-format effect for linguistic terms, $F(1, 32) = 6.31$, $p < .01$, with more being used around familiar format texts than with traditional texts. There were significant text-format effects for both text-world, $F(1, 32) = 7.07$, $p < .01$, and world-text, $F(1, 32) = 5.64$, $p < .02$, categories: More linguistic terms were used with familiar than traditional texts.

Table 1. Descriptive Statistics for Mothers' and Children's Utterances by Text Format*

	Traditional Text (TT)		Familiar Text (FT)	
	M	*SD*	*M*	*SD*
Maternal				
Answers own questions	0.02	0.03	0.04	0.04
Describes action	0.01	0.02	0.01	0.01
Clarify	0.01	0.01	0.01	0.02
Conflict/disagree	0.01	0.01	0.01	0.01
Corrects	0.02	0.02	0.01	0.01
Asks for description	0.02	0.05	0.01	0.01
Asks for a label	0.02	0.04	0.01	0.02
Asks to read or spell	0.01	0.01	0.01	0.01
Asks about a subordinate	0.01	0.01	0.01	0.01
Asks about a superordinate	0.01	0.01	0.01	0.01
Describes	0.05	0.05	0.07	0.07
Gives superordinate label	0.02	0.02	0.04	0.03
Gives subordinate label	0.34	0.37	0.12	0.16
Expands child's utterance	0.01	0.01	0.01	0.01
Linguistic question	0.05	0.05	0.11	0.11
Narrativizes	0.01	0.02	0.01	0.01
Negative reinforcement	0.01	0.01	0.01	0.01
Orient	0.01	0.01	0.01	0.02
Reads present text	0.12	0.32	0.03	0.06
Reinforce/repeat	0.07	0.06	0.09	0.05
Slot/frame provided	0.01	0.02	0.01	0.02
Text-world	0.01	0.02	0.03	0.03
WH-question	0.14	0.14	0.28	0.20
World-text	0.00	0.00	0.00	0.00
Yes/No question	0.01	0.01	0.01	0.01
Total Utterances	191.94	183.72	109.70	105.41

*Figures are reported as proportions.

Table 1. Descriptive Statistics for Mothers' and Children's Utterances by Text Format (*continued*)

	Traditional Text (TT)		Familiar Text (FT)	
	M	*SD*	*M*	*SD*
Child				
Acknowledge	0.01	0.01	0.02	0.03
Ask question	0.01	0.02	0.02	0.02
Clarify	0.01	0.01	0.00	0.01
Conceptual conflict/disagree	0.02	0.03	0.02	0.02
Correct answer (Subordinate)	0.08	0.10	0.16	0.13
Correct answer (Superordinate)	0.03	0.04	0.05	0.05
Correct answer (Other)	0.06	0.13	0.07	0.07
Inadequate answer	0.02	0.03	0.02	0.05
"Don't know"	0.01	0.01	0.02	0.02
Describes subordinate	0.02	0.03	0.02	0.03
Describes superordinate	0.01	0.01	0.00	0.00
Expands/extends	0.01	0.01	0.00	0.01
Initiates (Subordinate)	0.05	0.06	0.06	0.05
Initiates (Superordinate)	0.01	0.01	0.01	0.01
Linguistic	0.02	0.03	0.03	0.03
Narrativizes	0.01	0.01	0.00	0.00
Not relevant	0.50	0.40	0.29	0.25
Reads	0.01	0.01	0.01	0.01
Repeats	0.10	0.11	0.08	0.13
Text-world	0.01	0.01	0.01	0.02
"Want"	0.01	0.01	0.02	0.03
World-Text	0.01	0.01	0.01	0.02
Total Utterances	144.29	157.69	69.70	72.52

In the next series of analyses, we examined the relation among mothers' utterances, children's utterances, and children's identification scores on words presented in the different texts. In addition, we examined the ways in which these utterances related to children's general vocabulary (i.e., PPVT) scores. Because of the large number of interaction categories, an a priori decision was made in choosing categories to be examined. We included those categories that have been shown, in the extant research, to be related to children's vocabulary development. Specifically, we examined the following maternal variables: asks for labels, asks about subordinates, asks about superordinates, expands children's utterances, linguistic description, and text-world and world-text statements. The child utterances considered included: correct answer to subordinate and superordinate questions, initiates subordinate and superordinate labels, and world-text and text-world utterances. These correlations are displayed in Table 2. In this table we display the ways in which maternal and child utterances separately relate to the separate measures of words identified and PPVT scores. As can be seen in this table, maternal and child utterances were correlated separately with children's identification of words from both familiar and traditional texts as well as with children's PPVT scores.

Regarding maternal utterances, asking for labels and asking about subordinates both related to children's scores from familiar texts. Maternal expansions of children's utterances correlated positively and significantly with all of the child measures. Children's identification scores from traditional texts were predicted by maternal expansions, linguistic utterances, and text-world utterances. Regarding relations with the PPVT scores, the following maternal utterances around traditional texts were significant predictors: expands, linguistic, and text-world. Expands, however, was a significant predictor only for familiar texts.

Children's utterances also were used as correlates of their identification scores on the books read as well as on the PPVT. These correlations are also displayed in Table 2. Children's utterances were correlated with word identification and PPVT scores only on traditional texts. The following child utterances were significant predictors for word identification: correct answers to subordinates, world-text utterances, and text-world utterances. For PPVT scores, the following child utterances were significant: correct subordinate, initiate superordinate, and world-text.

In the next series of analyses, we situated the utterances that were significant correlates of word identification and vocabulary in their discourse contexts by examining antecedent and consequential utterances generated by the other interlocutor. For example, in the case of a specific target maternal utterance, say expansion, which related to children's word identification from traditional texts, we would examine the child utterances preceding and following the target maternal utterances. By *precede* and *follow*, we mean utterances generated in the turn of the other, nontarget interlocutor immediately before and after the target utterances. The analytical procedure used, following Bakeman and Gottman (1986), constructed transitional probability matrices and corresponding z-scores for a series of two-state

Table 2. Correlations Among Maternal and Child Utterances and Word Learning and Vocabulary Measures

	Traditional Text PPVT	Familiar Text PPVT	Traditional Text Words	Familiar Text Words
Maternal				
Asks label	.17	.18	.37	.40*
Asks subordinate	.27	.38	.08	.47**
Asks superordinate	-.01	.20	-.20	.23
Expands	.52**	.63***	.56**	.48**
Linguistic	.59***	.22	.60**	.30
Text-world	.42*	.36	.46*	.38
World-text	.00	-.17	.00	-.35
Child				
Linguistic	.36	.27	.14	.24
Correct subordinate	.47**	.27	.46*	.33
Correct superordinate	.32	.06	-.12	.34
Initiate subordinate	.30	.05	.29	-.33
Initiate superordinate	.47**	.02	.20	-.31
Text-world	-.30	.05	-.42*	-.04
World-text	.63***	.15	.65***	.03

* $p < .10$, ** $p < .05$, *** $p < .01$

models where the target utterance, such as the target of maternal asking for label, was at lag 0 and all categories of children's consequential utterances were at lag 1. Lag 1 was defined as an utterance in the subsequent turn. A turn is defined as talk generated by one person, bounded by the talk of another person. To determine antecedents of the target utterance, again using mothers' asking for label as an example, we determined the child utterances, at lag 0, that preceded it at a greater-than-chance rate. Separate two-state models were tested for all of the previously noted maternal and child variables. The statistically significant mother-to-child transitions around traditional and familiar texts are displayed in Tables 3 and 4, respectively, and the significant child-to-mother transitions are displayed in Table 5. Z-scores greater than 1.96 are indicative of utterances that occur at a greater-than-chance probability.

Starting with maternal utterances generated around traditional and familiar texts that related to children's identification, we examined the child utterances that preceded and followed the following maternal categories: asks for labels, asks about subordinates, expands, text-world.

Table 3. Maternal Utterances As Targets Around Traditional Texts

Child: Antecedent	Mother: Target	Child: Consequence
	Ask Label	
Correct Superordinate		Correct Answer Subordinate
Gives Label Subordinate		Initiates/Labels Subordinate
Narrativizes		Not Relevant (-)
		Repeat (-)
	Ask About Subordinates	
Acknowledge		Text-world
Correct Superordinate		Describe Subordinate
Initiates Label Superordinate		Not Relevant (-)
Not Relevant (-)		Incorrect Response
	Expands	
Asks Question		Acknowledge
Describes Subordinate		Asks Question
Initiates/Labels Subordinate		Expands/Extends
Initiate/Labels Superordinate		Initiates/Labels Subordinate
Not Relevant (-)		Narrativizes
World-Text		Not Relevant (-)
	Text-World	
Don't Know		Acknowledge
World-Text		Not Relevant (-)
		Text-World
		World-Text

It should be noted that one class of maternal utterances that was significantly correlated with children's word identification and vocabulary status, linguistic terms, was not followed at a greater-than-chance rate by any one class of child utterances. Table 3 shows that the child utterances following mothers' asking for labels were correct answers to subordinates for both traditional and familiar texts, and gives subordinate label, not relevant responses, and incorrect responses for traditional texts. Mothers' asking for labels around traditional texts was preceded by children's correct superordinate, correct label subordinate, and narrativizes. For familiar texts, children's use of initiates/labels subordinates followed mothers' asking for label at a greater-than-chance rate, whereas no one category of child utterances preceded this maternal category at a greater-than-chance rate.

Table 4. Maternal Utterances As Targets Around Familiar Texts

Child: Antecedent	Mother: Target	Child: Consequence
	Ask Label	
		Correct Answer Subordinate
		Initiates/Labels Subordinate
	Ask About Subordinate	
Correct Superordinate		Describes Subordinate
"Don't Know"		Initiates/Labels Subordinate
Repeat		Not Relevant (-)
	Expands	
Correct Superordinate		"Don't Know"
Describes Subordinate		Initiates/Lables Subordinate
Not Relevant (-)		Not Relevant (-)
Text-World		
	Text-World	
		Acknowledge
		Correct Answer Subordinate
		World-Text

When mothers asked about subordinates, the following child responses occurred at a statistically significant rate, although only for traditional texts: text-world utterances, describes subordinate, not relevant, and incorrect response. This maternal category was preceded by children's use of acknowledge, correct superordinate, initiates/labels superordinate, and not relevant. When mothers expanded children's utterances around traditional texts, children responded in the following ways: asks questions, acknowledge, expand/extend, initiates/labels subordinate, not relevant, and narrativize. Mothers' expansions around traditional texts were preceded by the following children's responses: asks questions, describes subordinate, initiates/labels subordinate and superordinate, not relevant, and world-text. Around familiar texts, children responded to expansions by describing subordinates, initiating/labeling subordinates, and responding in nonrelevant ways. Children's antecedents to maternal expansions around familiar texts included correct superordinate, describes subordinate, not relevant, and text-world.

Because children's utterances were predictive of word identification and related to PPVT scores only with traditional texts, maternal

Table 5. Child Utterances As Targets Around Traditional Texts

Mother: Antecedent	Child: Target	Mother: Consequence
	Incorrect	
WH Question		Answers Own Question
Ask Subordinate		Gives Label Subordinate
		Negative Reinforce
	Correct Answer Subordinate	
Answers Own Question (-)		Gives Label Superordinate
Clarify		Reinforce/Repeat
Slot/Frame		Slot/Frame
		WH Question
	Text-World	
Asks Subordinate		Gives Label Subordinate
Gives Label		Reinforce/Repeat
Text-World		WH Question
	World-Text	
Linguistic		Expands
World-Text		Reinforce/Repeat
		Slot/Frame
		Text-World
	Initiates Superordinate	
		Description
		Slot/Frame

antecedents and consequences of children's utterances will be presented only from that context. These sequential analyses are displayed in Table 5. Children's correct answers to subordinate questions were followed at a significant rate by the following maternal utterances: gives superordinate label, reinforce/repeat, slot/frame, and WH-question. This child category was preceded by the following maternal categories: answers own questions, clarify, and slot/frame. Children's text-world utterances were followed by the following maternal categories: gives subordinate label, reinforce/repeat, and WH-question. The same child category was preceded by the following maternal categories: asks subordinate, gives label, and text-world. Children's world-text utterances were followed by mater-

nal expansions, reinforce/repeat, slot/frame, and text-world and preceded by maternal linguistic and world-text utterances. Children's initiating superordinates were followed by maternal descriptions and slot/frame utterances. This form of child initiation was *not* reliably preceded by any one form of maternal utterance.

We were also interested in the ways in which mothers responded to children's incorrect responses to questions. Around traditional texts, mothers responded with the following: answers own questions, give subordinate label, and negative reinforcement. Around familiar texts, mothers responded with the following: conflict/behavior, gives subordinate and superordinate labels, negative reinforcement, reinforce/repeat (negative z), and yes/no question.

DISCUSSION

The general intent of this report is to describe the ways in which mothers and their children interacted around familiar and traditional books and to determine the relations between these interaction patterns and children's vocabulary. Our initial analyses were straightforward comparisons of types of utterances generated by mothers and children around traditional-format and familiar-format expository texts. Not surprisingly, mothers did most of the talking in both contexts. Mothers not only generated more total utterances than children, but they also generated more utterances in each category, except for the conflict category. Importantly, maternal utterances were responsive to or contingent on children's preceding utterances. These results are consistent with much research which describes child-adult joint interaction as reciprocal, with each participant's behavior being contingent on the other's (e.g., Ninio & Bruner, 1978; Vygotsky, 1978). Future research should address joint reading between children and other members of their social network, such as siblings. It may be that the affective and cognitive qualities of specific relationships, such as the cooperation between siblings during fantasy (Dunn, 1988), have important implications for early literacy and word learning.

The next comparison was in terms of text-format familiarity. We assumed that these mothers and children would exhibit different strategies around different formats. Such descriptions are interesting in their own right, to the extent that they provide important information on the ways in which these mothers and children jointly construct word meaning. These comparisons could also provide a basis from which to design early literacy curriculum materials.

First, more talk was generated around the traditional-format texts, compared to the familiar. This may have been because traditional expository texts are typically written in a "decontextualized" style. In such a style, shared knowledge assumptions and contextual clues are minimized; consequently, children need help deriving meaning from these texts. The mother's job here is to help the child negotiate the meaning of the texts by talking with the child about them (Cochran-Smith, 1984). The necessity for negotiated understanding results in more language being generated around traditional than familiar texts.

Specific strategies, which have been implicated in early literacy and word learning, were generated more frequently around familiar texts

than around the traditional texts. Specifically, mothers and children used more linguistic terms and text-world and world-text utterances in the familiar, compared to the traditional, context. Use of linguistic terms involved children and mothers talking about the linguistic process per se. Examples 1 and 2 depict the use of these terms by both mothers (M) and children (C).

1. M: OK. Now you try to *read*.
   C: I can't [*read*]
   M: Yeah, you can [*read*]. Just try.

2. C: Clown has *c*.
   M: Good. What [*letter*] does *toy* have?

As can be seen in the preceding examples, when children and mothers use linguistic terms, they are making linguistic processes explicit by holding them up for examination, discussion, and verbal encoding. Olson (1983), among others (e.g., Pellegrini et al., 1990; Watson, 1990), argues that use of linguistic terms is an indicator of linguistic awareness, or awareness of the processes and rules underlying language use. Other work in this area supports this conclusion to the degree that children's use of linguistic terms, of the sort used in this study, are correlated with measures of metalinguistic awareness such as phonemic awareness and word-boundary awareness (Galda, Stahl, & Pellegrini, 1993). The use of these terms, in turn, has been implicated in school-based literacy (Galda et al., 1993; Torrance & Olson, 1984) and vocabulary development (Dickinson & Smith, n.d.). It may be, as suggested by Olson and colleagues, that the use of these terms is an indicator of metalinguistic awareness, which, in turn, is necessary for literacy. Alternatively, it may be that these terms are important in school-based literacy only because school literacy lessons are characterized by the segmentation and labeling of the linguistic components of the reading process.

Text-world utterances, illustrated in Examples 3 and 4, and world-text utterances, illustrated in Examples 5 and 6, were also used more frequently around the familiar format than around the traditional format.

3. M: That's like ours.
   C: Yeah, Jackie broke it.

4. M: Trucks. Grandpa has a little truck.
   C: I wanna big truck.

5. M: Your ball like that.
   C: Basketball!

6. M: There's your Teddy.
   C: Yeah! 1,2,3 Teddies!

Cochran-Smith (1984) suggests that these two frequently used joint-reading strategies are indicative of different ways in which meaning is "taken" from text. These ways of taking meaning from texts are culturally learned, not universal (Barthes, 1974; Cochran-Smith, 1984; Heath, 1982). Indeed, Heath (1982) suggests that mainstream-culture mothers, while reading to their young children, teach them specific ways in which to interrelate text and personal experience; Heath's (1982) non-mainstream-culture children and mothers did not interrelate book knowledge and world knowledge. This sort of interrelating may not

happen with traditional texts, especially "story" books, but does happen with certain types of everyday expository text, like toy advertisements. The function of advertisements, both for adults and children, is to relate the objects presented for sale to a personal need or desire for those objects; thus, the motivational component of interacting around familiar texts may be important for the extension from text to life and vice versa.

That more of the text-world and world-text strategies were used in the familiar text format may also indicate that participants were able to use a variety of strategies to make sense of the words presented. Both children and mothers related the words presented in the texts to their personal experiences as well as related their personal experiences to the words presented.

That participants took meaning from familiar, compared to traditional, texts by both relating the text to the world and relating the world to the texts is methodologically important as well. This finding supports the long-held criticism of some types of developmental research that study children and their families in relatively strange situations for brief periods of time. Participants will exhibit higher levels of competence in situations that are familiar and valued, compared to less familiar and less valued contexts (Bronfenbrenner, 1979; Ogbu, 1981). In familiar tasks, much of the ordinary work, such as understanding a specific lexical item or determining interaction rules, becomes automatized; consequently, more cognitive resources can be allocated to reflection. That these familiar tasks are indigenous may also mean that they are valued by participants; this value may be what motivated participants to reflect upon the tasks.

The extent to which these strategies are used in different contexts by each participant also informs us as to the ways in which they take meaning from traditional and familiar texts. These strategies enable the child to interrelate the material presented in the texts with what is already known. In this regard the text-world and world-text strategies are similar to Piaget's (1983) assimilation and accommodation, respectively. When used in conjunction, these strategies should be important in word teaching and learning. As illustrated in Examples 6, 7, and 8, children's use of world-text strategies was a reliable predictor of their word identification and vocabulary status.

Next we examined the interrelation between interaction variables (by mothers and children) within each text format, children's identification of words presented in those contexts, and the children's more general vocabulary status. A striking finding in the correlation analyses was the *lack* of a single statistically significant correlation coefficient (a total of 14 were calculated) between children's utterances around familiar-format texts and their word recall and vocabulary scores. As reviewers are fond of saying: One or two significant correlations would be expected by chance. There were, however, numerous significant correlations between children's language around traditional texts and word-learning and vocabulary status. These findings are certainly noteworthy and in need of explanation. The first and most obvious explanation might be found in a ceiling effect on the word scores from the

familiar texts. No such ceiling was observed: The mean score was 4.95 out of a total of 10.

Our preferred explanation relates to the similarity in the design features of the traditional texts and the word-testing contexts, features not shared by the familiar format. Children's books in the traditional expository genre are decontextualized to the extent that meaning is conveyed by the text itself or by verbal interaction between tutors and tutees, not by shared assumptions between interlocutors. In joint reading, mothers and children socially negotiated the meaning of these texts so that the texts were mutually understood. Similarly, in the specific word texts for each book and for the PPVT, children were expected to use language to define words. Here too decontextualized meaning was conveyed. In the familiar format, meaning can be conveyed through shared knowledge, not explicitly with language, because participants are familiar with the material being presented.

This argument is further supported when we examine the specific child utterances that were predictors of word identification and vocabulary status. Children's correct answers to subordinate questions were significant positive predictors of both measures. In Examples 6 and 7, mothers ask a question about a subordinate, and children respond with a correct subordinate label.

6. M: What's that giraffe lookin' at?
   C: Her baby.

7. M: Where that camel?
   C: Near the 'potamus.

Similarly, in the testing questions, children were asked to identify specific subordinate classes. The experimenter showed the child a picture from the book and then asked the child: What's this? The child was expected to respond: Giraffe. Thus, in both formal testing and responding with subordinates, children are responding to demands to provide verbal labels. These test-like sequences are reminiscent of the teacher-child sequences described by Mehan (1979).

Children's use of world-text utterances around traditional texts was also positively and significantly related to word learning and vocabulary status. For example:

8. C: 'lanta zoo like that.

This strategy is used as a way of relating something external to the text to the text itself and, consequently, making the text comprehensible (Cochran-Smith, 1984). In short, it seems a very effective learning strategy, and it is not surprising that children who used it identified words from texts and had high vocabulary scores.

Children's text-world utterances, on the other hand, were negative predictors of word identification (significantly) and vocabulary (not significantly). This was unexpected in that this class of utterance can be used as a way in which to gain information (Cochran-Smith, 1984); information from the text can be applied to extratextual contexts. Consequently, this should have related to vocabulary status. This result becomes more understandable, however, when we examine the maternal utterances that followed children's text-world utterances. Two

of the three maternal utterances which followed did not require children to talk further about the reference. One frequently occurring scenario had mothers providing labels for children, whereas another involved mothers repeating children's utterances. Only when mothers asked WH-questions after children's text-world utterances, were they required to verbalize further. As illustrated below, requiring children to talk about pictures and text, often via maternal expansions, is a powerful predictor of word identification.

Maternal utterances that predicted children's word identification and vocabulary included asks label, asks subordinate, text-world utterances, linguistic terms, and expansions. These findings reinforce extant theory and research that highlight the importance of maternal strategies that, generally, enable children to talk about the text and, more specifically, enable children to reflect on the text and its meaning. Specific to text-world utterances, as noted previously, this is an important strategy for understanding text (Cochran-Smith, 1984; Heath, 1982; Stahl & Fairbanks, 1986).

Maternal expansions of children's utterances were important in both text formats. Indeed, expansions are important for a number of child language-learning measures. The use of expansions by mothers and other adults predicts many aspects of children's linguistic facility because they get children to process adult language and then use their own language (Cazden, 1965; Cornell et al., 1988; Dickinson & Smith, n.d.). In the present study, maternal expansions were preceded by a number of child utterances, ranging from seemingly irrelevant utterances to providing labels and interrelating textual and world information. Thus, mothers seemed to use this strategy in a variety of discourse contexts. Expansions were also followed by a variety of child verbalizations, from providing labels to asking questions. An example of a sequence from a traditional text involving children's descriptions, maternal expansion, and children's questions follows.

9. C: It's funny lookin'.
   M: Yeah, it has a huge mouth.
   C: How many teeth are there?

Thus, expansions, as well as the other maternal utterances discussed, seem to be important teaching strategies, to the extent that they elicit children's verbalizations and participation in joint reading. When children verbalize around labeling texts, they also identify the labels later. By extension, mothers' more general use of such strategies is reliably related to more general vocabulary status; thus, mothers who talk with their children in such a way as to elicit children's talk have children who are more facile with language.

The sequential analyses also suggest something specific about the ways in which children talk after mothers: They frequently repeat the strategies that mothers used in preceding utterances. Specifically, if one examines the child consequences of maternal nonquestioning utterances, it is clear that children repeat mothers' utterances. The reverse, that is, mothers' copying children's preceding utterances, does not seem to be occurring. This does not, however, suggest that joint book reading is a unidirectional process of mothers socializing children. Mothers' language is also contingent

to children's. For example, when children gave incorrect responses to mothers' WH-questions, mothers (at a greater-than-chance level) gave the correct answer or told children that the answer was incorrect. Similarly, mothers reinforced children's correct responses. In short, mother-child interaction around texts is transactional. Children do not merely copy maternal strategies; maternal strategies are responsive to children's performance, and children are, in turn, responsive to mothers' strategies.

It is important for future research to examine how these roles vary in other social contexts, such as with peers at school and with grandparents and siblings at home. It is probably the case that children take different roles in these situations than with parents and teachers. For example, there may be more conflict in sibling interaction around books than in the mother-child situations. Different types of conflicts may have different implications for children's language and literacy development.

Although the present study showed the ways in which mothers and their children interacted around familiar texts in their homes, much more research in this area is needed. There is urgent need for naturalistic, longitudinal research on the language learning and teaching of nonmainstream-culture children. The important work of Heath (1983) and Miller (1982) in this area provides both methodological and theoretical guidance for such ventures. Specifically, long-term observations of children in various literacy events, both at home and in school, are needed. Descriptive data from such observations should help us understand the uses of literacy and text in different communities. We need to know, for example, more about the types of texts available and the participation in various literacy events. The compilation of such descriptive data is essential to the important work of educating all our children.

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REFERENCES

Bakeman, R., & Gottman, J. (1986). *Observing interaction*. New York: Cambridge University Press.

Barthes, R. (1974). *Introduction to S/Z*. New York: Hill and Wang.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bus, A., & van Ijzendoorn, M. (1988). Mother-child interaction, attachment, and emergent literacy. *Child Development, 59*, 1262-1272.

Caldwell, B., & Bradley, R. (1984). *HOME Observation for Measurement of the Environment*. Unpublished manuscript, University of Arkansas, Little Rock.

Cazden, C. (1965). *Environmental assistance to the child's acquisition of grammar*. Unpublished doctoral dissertation, Harvard University, Cambridge, MA.

Cochran-Smith, M. (1984). *The making of a reader*. Norwood, NJ: Ablex.

Cornell, E., Senechal, M., & Broda, L. (1988). Recall of picture books by 3-year-old children: Testing and repetition effects in joint reading activities. *Journal of Educational Psychology, 80*, 537-542.

Dickinson, D., & Smith, M. (n.d.) *Long-term effects of preschool teachers' book readings on low-income children's vocabulary, story comprehension, and print skills*. Unpublished manuscript.

Dunn, L., & Dunn, L. (1981). *Peabody picture vocabulary test* (rev. ed.). Circle Pines, MN: American Guidance Service.

Dunn, J. (1988). *Social understanding*. Cambridge, MA: Harvard University Press.

Fader, D., & McNeil, E. (1966). *Hooked on books*. New York: Berkeley.

Galda, L., Stahl, S., & Pellegrini, A. D. (1993). *Language and literacy in a first grade-classroom: Annual report to the NRRC*. Athens, GA: Universities of Georgia and Maryland, National Reading Research Center.

Heath, S. (1982). What no bedtime story means. *Language in Society, 11*, 49-76.

Heath, S. (1983). *Ways with words*. New York: Cambridge University Press.

Laboratory of Comparative Human Cognition. (1983). Culture and cognitive development. In W. Kessen (Ed.), *Handbook of child psychology: History, theory, and methods* (pp. 295-356). New York: Wiley.

Mehan, H. (1979). *Learning lessons*. Cambridge, MA: Harvard University Press.

Miller, P. (1982). *Amy, Wendy, and Beth: Learning language in south Baltimore*. Austin, TX: University of Texas Press.

Ninio, A. (1983). Joint book reading as a multiple vocabulary acquisition device. *Developmental Psychology, 19*, 445-451.

Ninio, A., & Bruner, J. (1978). The achievement and antecedents of labeling. *Journal of Child Language, 5*, 1-15.

Ogbu, J. (1981). Origins of human competence: A cultural-ecological perspective. *Child Development, 52*, 413-429.

Olson, D. (1983). "See! Jumping! Some oral language antecedents of literacy. In H. Goelman & F. Smith (Eds.), *Awakening to literacy* (pp. 186-192). Portsmouth, NH: Heinemann.

Pellegrini, A. D., Brody, G., & Sigel, I. (1985). Parents' book-reading habits with their children. *Journal of Educational Psychology, 77*, 332-340.

Pellegrini, A. D., Perlmutter, J., Galda, L., & Brody, G. (1990). Joint reading between black Head Start children and their mothers. *Child Development, 61*, 443-453.

Piaget, J. (1983). Piaget's theory. In W. Kessen (Ed.), *Handbook of child psychology: History, theory, and methods* (pp. 103-128). New York: Wiley.

Snow, C., & Goldfield, B. (1983). Turn the page please: Situation-specific language acquisition. *Journal of Child Language, 10*, 551-570.

Sorsby, A., & Martlew, M. (1991). Representational demands in mothers' talk to preschool children in two contexts: Picture book reading and a modeling task. *Journal of Child Language, 18*, 373-395.

Stahl, S., & Fairbanks, M. (1986). The effects of vocabulary instruction. *Review of Educational Research, 56*, 72-110.

Torrance, N., & Olson, D. (1984). Oral language competence and the acquisition of literacy. In A. Pellegrini & T. Yawkey (Eds.), *The development of oral and written language in social contexts* (pp. 167-182). Norwood, NJ: Ablex.

Tulkin, S. (1972). An analysis of the concept of cultural deprivation. *Developmental Psychology, 6*, 326-339.

Valdez-Menchaca, M., & Whitehurst, G., (1992). Accelerating language development through picture book reading. *Developmental Psychology, 28*, 1106-1114.

Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wachs, T. (1985, April). *Measurement of environment in the study of organism-environment interaction*. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto.

Watson, R. (1990). Literate discourse and cognitive organization. *Applied Psycholinguistics, 10*, 221-236.

Werner, H., & Kaplan, B. (1952). The acquisition of word meanings. *Monographs of the Society for Research in Child Development, 15* (1, Serial No. 51).

Whitehurst, G., Falco, F., Lonigan, C., Fischel, J., DeBaryshe, B., Valdez-Menchaca, M., & Caulfield, M. (1988). Accelerating language development through picture-book reading. *Developmental Psychology, 24*, 552-558.

APPENDIX

Mothers' Utterances

1. Answers own questions: Answers own question where child gives no immediately preceding response or an inadequate response (e.g., That's an elephant.).

2. Describes actions: Describes an action in the text (e.g., Look at that guy run.).

3. Clarify: Any clarification of a preceding utterance (e.g., I asked you to tell me that name.).

4. Conflict/disagree: Where there is a disagreement about behavior (e.g., I told you to sit.).

5. Corrects: Specific feedback on children's inadequate response (e.g., That's a zebra [not a horse].).

6. Asks for description: Asks to describe part or whole of a text item (e.g., What's the color?).

7. Asks for a label: Asks for a general name or label (e.g., What's that called?).

8. Asks to read or spell: Explicitly asks child to read or spell (e.g., Now how do you spell that?).

9. Asks about a subordinate: Subordinates are defined as particular members of a class; for instance, *apples* are a member of the class *food*. Asks location, an example, or a clarification of a subordinate (e.g., Where do zebras live?).

10. Asks about a superordinate: Superordinates are defined as classifiers that are above the subordinate level and below the basic level; for instance, *fruit* is subordinate to *apple* because it represents a larger class than apple, but a smaller class than *food*. Asks for the location, an example, or a clarification of a superordinate (e.g. Is that like the hammer we have?).

11. Describes: Describes action, attribute, function (Look, he's sliding.).

12. Gives superordinate label: Provides superordinate label (e.g., Those are clothes.).

13. Gives subordinate label: Provides specific label (e.g., That's a scarf.).

14. Expands child's utterance: Extends what the child said in the preceding utterance (e.g., And it's blue too.).

15. Linguistic question: A question containing a term denoting a linguistic process, such as *say*, *talk*, *read* (e.g., Can he really talk on the phone?).

16. Linguistic description: An utterance containing a term denoting a linguistic process (e.g., Tell me about that.).

17. Narrativizes: A narrative line is introduced when the elements of pretense and temporal motivation are introduced (e.g., The mommy and baby camels are having lunch.).

18. Negative reinforcement: An evaluation of children's performance that contains a negative term (e.g., That's wrong.).

19. Orient: Verbal focus and attention statements (e.g., Look here.).

20. Reads present text: Reads text verbatim.

21. Reinforce/repeat: Either repeats verbatim the child's preceding utterance or evaluates it without a negative term (e.g., Right, that's the tape recorder.).

22. Slot/frame provided: Provide an opening or a slot in an utterance for child to fill in (e.g., This _____ is very tired.).

23. Text-world: Relate an item in the text to something external to the text (e.g., That's like ours.).

24. WH-question: Any interrogative with a *what*, *why*, *where*, *when* component (e.g., Where do they live?).

25. World-text: Relate something external to the text to the text itself (e.g., Ours is like that.).

26. Yes/no question: An interrogative that can be answered adequately with a *yes* or *no* (e.g., Is that a ruler?).

[27. Other: Any utterance that doesn't fit in the preceding categories.]

Children's Utterances

1. Acknowledge: Responds verbally but without propositional content to mother's preceding utterance (e.g., Uh-uh).

2. Ask question: Any interrogative, either direct or indirect, relating to text (e.g., What's that?).

3. Clarify: Provides clarification of his/her own preceding utterances (e.g., That's where we eat lunch.).

4. Conceptual conflict/disagree: Disagrees with mother's preceding utterances (e.g., No, that's the zoo thing.).

5. Correct answer to subordinate-label question: In response to mother's preceding question about a subordinate category in the text (e.g., Frog).

6. Correct answer to superordinate-label question: In response to mother's preceding question about a superordinate category (e.g., They're zoo animals.).

7. Correct answer to other questions: Any correct response to other questions related to text (e.g., They're black.).

8. Inadequate answer: A response that doesn't provide the information requested in the preceding question.

9. "Don't know": Where child responds with some form of "Don't know."

10. Describes subordinate: Describes any item in text labeled by mother or child as a subordinate, such as apple, mouse, watermelon (e.g., Mother: Look at that apple. Child: It's red.).

11. Describes superordinate: Describes any item in text labeled by mother or child as a superordinate, such as animal, food (e.g., Mother: There's the animal. Child: It's furry.).

12. Expands/extends: Adds to what mother said in preceding utterance (e.g., Mother: There's your playground; Child: And that's the slide.).

13. Initiates/labels subordinate: Child labels an item in text as subordinate (e.g., Like my doll.).

14. Initiates/labels superordinate: Child labels a superordinate (e.g., Look at all the animals.).

15. Linguistic: Any utterance with a term referring to linguistic processes (e.g., I can't read.).

16. Narrativizes: Child introduces pretense and temporal organization to the text (e.g., And the little boy is scared.).

17. Not relevant to preceding utterance or text: Any non sequitur.

18. Reads: Read words in text verbatim.

19. Repeats: Repeats verbatim what mother said in preceding utterance.

20. Text-world: Relates item in text to the extratextual world (e.g., That's like mine.).

21. "Want": Use the word "want" in any way (e.g., I want you to.).

22. World-text: Relates something from the external world to the text (e.g., Nick has one of those.).

[23. Other: Any child utterance not fitting into the above categories.]

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